ORIGINAL ARTICLE

Effect of Vasectomy on Quality of Life Among Adult Men in Central Lampung Indonesia

Sri Nowo Retno, Hari Krishnan Andi, Hafizah Che Hassan

Lincoln University College, Wisma Lincoln, No, 12-18, Jalan SS 6/12, 47301 Petaling Jaya, Selangor, Malaysia

ABSTRACT

Introduction: Indonesia holds the fourth position in the world as the most populous country in 2009. Generally, the outcome of Indonesian Family Planning Program (FPP) acceptors for Indonesian women was sufficient by 59% of the total 60.3% of acceptors but it is still insignificant if compared to men's participation. The coverage of male acceptors in family planning programs in Indonesia is still quite low at only 1.3% and those undergoing vasectomy are only 0.4%. **Methods:** The method that has been used in research is structural equation modeling (SEM) analysis. SEM test which is used to determine the analysis of simultaneous relationships between the dependent and independent variables. The stages in SEM (structural Equation Modeling) are $\eta B = \eta \Gamma + x + \zeta$. The populations in this study were men who underwent a vasectomy. Sampling was done by snowball sampling technique. Data were obtained from 100 respondents. **Results:** From the results of the study, it was found that vasectomy did not affect the quality of life of men both in terms of social relations, psychological health, physical health including sexuality, and the environment. Based on the dimensions of quality of life, the psychological indicator (Y3) obtained the highest R2 value of 2.74, while the physical health indicator obtained the lowest R2 value of 0.0024. From the above equation, it can be seen that Respondents had a positive significant effect on the quality of life. **Conclusion:** Vasectomy is a good contraceptive method for men.

Keywords: Vasectomy, Physical health, Psychological, Social relationships, Environment, Qualityof life

Corresponding Author:
Sri Nowo Retno., M.Kes.
Email: sri01nowo@gmail.com
Tel: +6281369518659

INTRODUCTION

The coverage of the vasectomy family planning program in Indonesia in 2019 had not yet reached the government's target. Report of the Indonesian Health Information Center in 2017 showed that the programme reached 0.5% of the population only and in 2018 it only reached 63.27%, while the target expected by the government was 66%. (1). The data showed that the use of contraceptives in men is relatively low, especially for vasectomy. In Indonesia, participation in contraceptive use is only around 5.6%, using condoms 1.8%, coitus interruptus 2.3% and periodic abstinence 1.3%, and vasectomy 0.2% in 2012 (2)

Almost all communities in Indonesia are still afraid to use vasectomy contraception, one of which is Lampung. The use of vasectomy contraception in Lampung province is also very low at only 0.2%. The reason for this as interpreted caused by myths that often exist in the community and the fear and anxiety about the side effects of vasectomy (3)

MATERIALS AND METHODS

This research has used quantitative research with a cross-sectional design. The study was conducted in the Punggur Region, Central Lampung from September 2018 to December 2018. This study was conducted after obtaining approval from clients who had undergone a vasectomy. The study population consisted of couples in the childbearing age, undergone a vasectomy and lived in Central Lampung. The total population in this study was 141 vasectomy acceptors cases. The selection of respondents (sample) was done by using the snowball sampling technique. The inclusion criteria in this study were men who underwent vasectomy for 5 years and 0-1 years. The exclusion criteria in this study were men who did not opt for vasectomy even though they had met

the requirements but were not willing to be respondents. Data collection was done by distributing questionnaires to respondents and data was collected from as many as 100 respondents. The data analysis used in this research is descriptive analysis and structural equation modeling (SEM) analysis with the statistical tool Lisrel version 8.71. Thus, it was analyzed whether vasectomy had an affect on the quality of life, its significance, and effectiveness of Respondents variable indicator on quality of life. This study was conducted after obtaining consent from clients who underwent vasectomy (4).

Ethical Clearance

The study protocol was approved by the Politeknik Kesehatan Jakarta I Ethics Board of Health Research (vide memo no. 144/KEPK/IX/20Ig dated 3rd September 2019).

RESULTS

Demographic data of respondents

Table I. Demographic Data of Respondents

Demographic Data	Value
Duration of Marriage	24.3 years
Number of Children	2.0
Period of Vasectomy	24.0 (35-60)
Education Level	3.0
Psychic	24.0 (13-32)
Psychological	22.3 (15-29)
Social	12.2 (8-15)
Environment	32.6 (24-40)

From the table above, it was found that the mean duration of marriage was 24.3 years, the mean number of children was 2.6, The shortest period of vasectomy was 35 years and the longest period of vasectomy was 60 years. The lowest educational level was elementary school and the highest was high school. The lowest physical health was 13 and the highest physical health value was 32. The lowest psychological value was 15 and the highest psychological value was 29. The lowest social relationships value was 8 and the highest social relationships value was 15. The lowest environmental value was 24 and the highest environmental value was 40.

Reliability Test

For the latent variable of "Quality of Life", the highest R^2 value was the psychological indicator (Y3), which was 2.74, while the lowest was the physical health indicator with an R^2 value of 0.0024. For the latent variable of "Respondents ", the highest R^2 value was for Number of children indicator (X13), which was 0.41, while the lowest was the Body Mass Index (X15) indicator with an R^2 value of 0.071.

Validity Test

The four indicators of quality of life, psychological (Y3) was the best indicator because it had the highest loading value of 3.46, and Initial time of Vasectomy was the best indicator of the Respondentsvariable because it had the highest loading value of 5.26. The estimation for the structural equation is as follows:

Table II: Structural Equation

Y =	Error var.=	R =
0.22*X1	0.95	0.048
(0.32)	(1.37)	

From the above equation, it can be seen that Respondents had a positive significant effect on the quality of life. This can be seen from the moderate R^2 value of 0.048 and the t value (0.69) which was much less than 1.96. All indicators were met with the Goodness of Fit (GFI) value of 0.97, Root Mean Square Error of Approximation (RMSEA) value of 0.000, Chi-Square value of 12.05 with 13 degrees of freedom, and the p-value was not significant (p=0.52), which indicated that the model was fit and the data was appropriate. Based on the estimated value of the covariance between the two latent variables in this study, it was shown that the covariance between the quality of life and the underground client was 0.22.

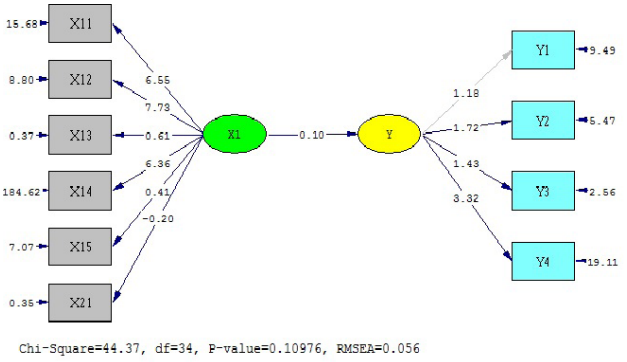

Figure 1 Path Diagram

Figure 1 visualize the standardized values for the relationship between the parameters. If observed, the estimated value shows that the covariance between the two latent variables in this study showed that the quality of life and the Respondents was 0.10.

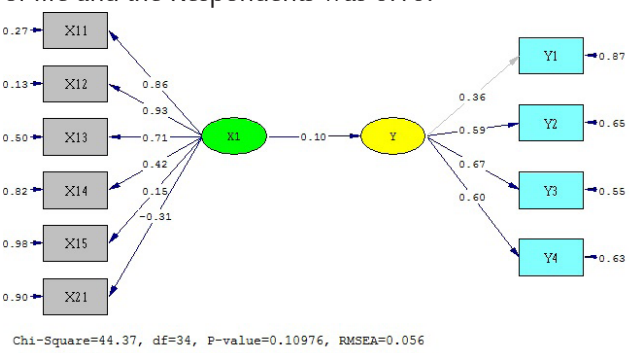

Figure 2: Standardized Solution Diagram

Figure 2 visualizes the standardized values for the relationship between the parameters. It can be seen that the standardized value of the length of marriage indicator (X15) had the greatest effect on the Respondents variable (0.93). The quality of life variable was influenced by the Respondents indicator (0.10).

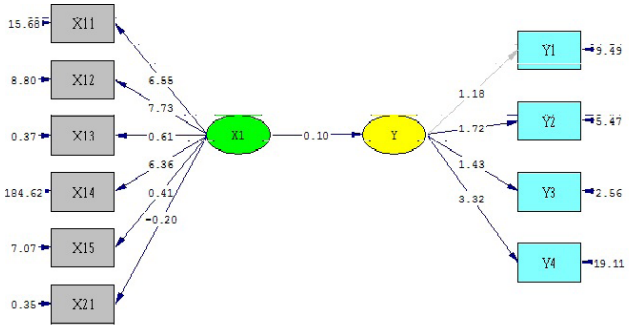

Figure 3: T-values

The path diagram in Figure 3 above showed that the *t* (*t*-values) for the estimation between the parameters. A significant relationship of 5% (default LISREL) is shown in black. Meanwhile, the insignificant relationship is shown in red. Thus, we can conclude that the relationship between Respondents and quality of life variables was not significant ((5) in (6).

DISCUSSION

The moderating effect of length of marriage on the relationship between vasectomy and quality of life

The results showed that all indicators met the Goodness of Fit (GFI) value of 0.97, the Root Mean Square Error of Approximation (RMSEA) value of 0.000, the Chi-Square value of 12.05 with 13 degrees of freedom, and the *p*-value was not significant (*p*=0.52).

The results of the study are following the vasectomy requirements that must be met, including voluntary participation, having a minimum number of two children, understanding the consequences of vasectomy, the age of the candidate is not less than 30 years, the age of the wife is not less than 20 years and not more than 45 years (7).

The results of statistical tests showed that there is a relationship between the husband's age and the use of male contraceptives with a *p*-value of 0.0030, which means that the higher the age of the husband, the more use of male contraceptives. About the use of family planning, age plays an intrinsic factor.

Moderate effect of length of marriage on the relationship between vasectomy and quality of life

Having children is the goal of the marriage relationship. Marriage is an intimate, sexual affair which will form a kinship relationship either culturally or socially. In women, sex has a neurological function and there are still many who do not understand the actual sexual function (8)

Moderate effect of the number of children on the relationship between vasectomy and quality of life

Optimal parity in the family is 2-3 and parity 1 and parity more than 3 tend to have a risk of maternal death. High parity can be stopped or prevented by effective contraception. The number of living children affects childbearing age, in determining the contraceptive method to be used. In couples with children, there is still a small tendency to use contraceptives with low effectiveness, while in couples with many children there is a tendency to use contraceptives with high effectiveness.

Based on research conducted by Maharyani et al., (2010) in Kebumen, Central Java, it is known that based on the number of children, the characteristics of the husband are related to the husband's participation in family planning as indicated by the Chi-Square value. = 10.916 (p = 0.001 < 0.05)" (9). This is because the number of children in the family is mostly planned and discussed between husband and wife based on various considerations such as the health condition of the husband and wife, as well as mental readiness and economic capacity to ensure the health, education, and future of the children.

Men in urban settings undergo vasectomy at an older age and with fewer children than in rural practice settings. While studies evaluating the demographics of men undergoing vasectomy have been performed previously, our results are unique in terms of direct comparison between different population concentrations. Studies have evaluated the correlation between age and the number of children for men undergoing vasectomy.

Moderate effect of education level on the relationship between vasectomy and quality of life

The results of statistical tests on the relationship between husband's characteristics in terms of education and vasectomy participation showed that most of the husbands with vasectomy were those with low education. Education is an effort to provide knowledge so that positive behavioral changes can take place.

The results showed that husbands' participation was low in terms of husbands' education because husbands' education was not directly related to knowledge. Human effectiveness will be influenced by knowledge both in terms of motor and psychic factors (10).

Therefore, higher education is not necessarily high knowledge. As a result, the husband's participation in family planning is also not necessarily good because of the husband's educational condition.

Moderate effect of Body Mass Index on the relationship between vasectomy and quality of life

Data Processing with Structural Equation Modeling (SEM)

The results of the study on the quality of life variable in vasectomy clients obtained the largest R2 value for psychology with an R2 value of 2.75 with psychological dimensions including ways of thinking, learning, memory, and concentration. It is related to the mental state of the individual.

The mental state refers to whether or not an individual can adapt to various internal and external developmental demands according to abilities. Psychological aspects are also related to physical aspects, where individuals can perform an activity well if the individual is mentally healthy. Psychological well-being includes body image and appearance, negative thoughts, positive attitudes, self-esteem, learning ability, memory concentration, spiritual/religious/personal beliefs, and mental status. Comfort in sexual intercourse was found in psychological indicators. All participants reported that they were comfortable having sex after vasectomy surgery. Regarding self-confidence in sexual intercourse, most of the participants felt confident in their sexual abilities after vasectomy.

The results of this study are in line with Utami (2018) which showed that respondents willing to undergo vasectomy admitted that the frequency of sexual intercourse with their wife could even reach two ejaculations in a night after the procedure (11). Of the 5 domains of sexual function, sexual desire and satisfaction showed a statistically significant increase after vasectomy. The conclusion of this study is that vasectomy does not cause sexual dysfunction in men. Vasectomy also does not cause a decrease in sexual desire. Of the 76 couples, 93% of men and 96% of their female partners would recommend and have another vasectomy. The postoperative pain score was 3.5 on a scale of 0-10, and no postoperative complications were reported.

The statistical test for the dimension of quality of life with the smallest R2 value is found in physical indicators with a value of 0.0024. The results of this study showed that most of the participants experienced physical changes after vasectomy, including swelling in the operating area and weakness in vital organs.

Participants who stated that their sexual ability was better interpreted the ability to have longer sexual intercourse and may have sex more often. Feelings passionate and long-lasting sexual intercourse reduced initial fear of the side effects of a vasectomy.

As research from Faris and Indarjo (2015) reported that anxiety about sexual potency experienced by vasectomy acceptors is still in the adaptive phase and anxiety about decrees in sexual abilities does not have a significant impact on vasectomy acceptors (12).

CONCLUSION

This study concludes that vasectomy does not cause side effects in men and does not affect men's quality of life, both psychological health, physical health including sexuality, and the environment. Vasectomy appears to be a safe and highly effective fertility control technique that can be compared to fertility control methods used by women. Clinicians should communicate this knowledge for educational purposes to lower the risk of vasectomy and to promote vasectomy for male sterilization.

ACKNOWLEDGMENTS

The authors are thankful to the institutional authorities for the guidance in the completion of the work.

REFERENCES

1. Indonesia KR. Profil Kesehatan Indonesia Tahun 2017.
2. Kemkes RI. Situasi Dan Analisis Keluarga Berencana. Jakarta. Hal. 2014;1(2):7.
3. Statistik BP, Kependudukan B, Nasional KB. Survei Demografi Dan Kesehatan Indonesia (Indonesian Demographic And Health Survey). Jakarta: ICF International. 2012.
4. Santoso S. Konsep Dasar Dan Aplikasi SEM Dengan AMOS 24. Elex Media Komputindo; 2018 May 28.
5. Imam G. Aplikasi analisis multivariate dengan program SPSS. Semarang: Badan Penerbit Universitas Diponegoro. 2005.
6. Jureskog KG, Surbom D. LISREL 8: Structural Equation Modeling With The SIMPLIS Command Language. Scientific Software International; 1993
7. Hindriyawati W, Amelia SW. Analisis Usia Dan Lama Penggunaan Dengan Frekuensi Keluhan Penggunaan Kontrasepsi Vasektomi Di Desa Giripurwo Kulonprogo Daerah Istimewa Yogyakarta. Jurnal Medika Cendikia. 2018 Aug 29;5(01):22-35.
8. Murtagh J. Female Sexual Function, Dysfunction, And Pregnancy: Implications For Practice. Journal Of Midwifery & Women's Health. 2010 Sep 1;55(5):438-46.
9. Maharyani HW, Handayani S. Hubungan Karakteristik Suami Dengan Keikutsertaan Suami Menjadi Akseptor Keluarga Berencana Di Wilayah Desa Karangduwur Kecamatan Petanahan Kabupaten Kebumen Jawa Tengah. Kes Mas: Jurnal Fakultas Kesehatan Masyarakat Universitas Ahmad Daulan. 2010;4(1):24945.
10. Notoatmodjo S. Pendidikan Dan Perilaku Kesehatan. 2003.
11. Utami T. Pengalaman Menggunakan Alat Kontrasepsi Mantap (Vasektomi) Di Kecamatan Wanasaba Kabupaten Lombok Timur. Jurnal Ilmu Kesehatan Bhakti Husada: Health Sciences Journal. 2018 Dec 3;9(2):55-65.

12. Faris AD, Indarjo S. Gambaran Kecemasan Terhadap Kemampuan Seks Pada Akseptor Kontrasepsi Mantap Pria/Vasektomi (Studi Di Kecamatan Gunung Pati Kota Semarang). Unnes Journal of Public Health. 2015 Oct 15;4(4).